

REMARKS

Claims 12-17 are pending. Claims 12 and 14-17 are amended herein to address informalities identified by the Applicants.

Specification

The title and specification are amended in response to the issues raised in the instant Office Action.

103 Rejections

Claims 12 and 15

The instant Office Action states that Claims 12 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hofmann et al. ("Hofmann;" U.S. Patent No. 6,707,098). The Applicants have reviewed the cited reference and respectfully submit that the present invention as recited in Claims 12 and 15 is not anticipated nor rendered obvious by Hofmann.

Independent Claim 12 recites "An electric device comprising: a first elongated nanowire on an insulating surface and a second elongated nanowire on said insulating surface at a right angle to said first elongated nanowire and separated therefrom by a gap of between 0.4 nm and 10 nm" (emphasis added).

The instant Office Action states that nanotubes 101 and 107 of Hofmann are at right angles. However, nanotube 101 is on one surface and nanotube 107 is on a different surface; nanotubes 101 and 107 are not on a same surface. According to Hofmann, nanotubes on a same surface are parallel to each other, not at a right angle to each other. For example, nanotubes 107 of Hofmann's Figure 1 are parallel to each other, not at right angles to each other as claimed.

Hence, Applicants respectfully submit that Hofmann does not show or suggest “a first elongated nanowire on an insulating surface and a second elongated nanowire on said insulating surface at a right angle to said first elongated nanowire” as recited in independent Claim 12 (emphasis added).

Furthermore, Applicants respectfully disagree with the statements in the instant Office Action that the gap dimensions in Hofmann are close enough to the range of dimensions recited in Claim 12. Applicants respectfully note that there is no overlap between the range of dimensions cited in Hofmann and the claimed range of dimensions. Applicants also respectfully note that the difference between the minimum of the range cited in Hofmann and the maximum of the claimed range is almost ten percent; that is, at their closest points, the two ranges differ by almost ten percent. The instant Office Action provides no basis for concluding that the range cited in Hoffman and the claimed range are close enough. Applicants respectfully submit that, lacking such a basis, the definition of “close enough” applied in the instant Office Action appears to have been selected arbitrarily.

Moreover, Applicants respectfully note that the gap dimension as recited in Claim 12 is for a gap between two nanowires on a surface, while the dimension cited in Hofmann is the distance between two nanotubes on different surfaces.

In summary, Applicants respectfully submit that the present claimed invention as recited in independent Claim 12 is not shown or suggested by Hofmann. Accordingly, Applicants respectfully submit that the basis for rejecting Claim 12 under 35 U.S.C. § 103(a) is traversed, and that Claim 12

is in condition for allowance. As such, Applicants respectfully submit that the basis for rejecting Claim 15 under 35 U.S.C. § 103(a) is also traversed, as Claim 15 is dependent on an allowable base claim and contains additional limitations.

Claim 13

The instant Office Action states that Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hofmann and Shin et al. ("Shin," U.S. Patent No. 6,515,339). The Applicants have reviewed the cited references and respectfully submit that the present invention as recited in Claim 13 is not anticipated nor rendered obvious by Hofmann and Shin, alone or in combination.

Claim 13 is dependent on Claim 12 and recites additional limitations. Hence, by demonstrating that Hofmann and Shin (alone or in combination) do not show or suggest the limitations of Claim 12, it is also demonstrated that Hofmann and Shin (alone or in combination) do not show or suggest the limitations of Claim 13.

As presented above, Applicants respectfully submit that Hofmann does not show or suggest the limitations of Claim 12. Applicants also respectfully submit that Shin does not overcome the shortcomings of Hofmann. Specifically, Applicants respectfully submit that Shin, alone or in combination with Hofmann, does not show or suggest "a first elongated nanowire on an insulating surface and a second elongated nanowire on said insulating surface at a right angle to said first elongated nanowire," nor does Shin, alone or in combination with Hofmann, show or suggest that the first and second nanowires on said surface are "separated ... by a gap of between 0.4 nm and 10 nm," as recited in independent Claim 12.

Therefore, Applicants respectfully submit that the present claimed invention as recited in independent Claim 12 is not shown or suggested by Hofmann and Shin, alone or in combination. Accordingly, Applicants respectfully submit that the basis for rejecting Claim 13 under 35 U.S.C. § 103(a) is traversed, as Claim 13 is dependent on an allowable base claim and contains additional limitations.

Moreover, Applicants respectfully disagree with the statements in the instant Office Action that Shin teaches forming a transistor from nanowires, as stated in the instant Office Action. Lines 9-30 in column 1 of Shin, which are specifically cited in the instant Office Action, appear only to describe that a nanotube can be used to bridge between a source and a drain in a field effect transistor (FET). Applicants respectfully submit that there is no showing or suggestion in Shin that Shin's source and drain are formed from the first and second end of a nanowire, as recited in Claim 13. Furthermore, Figures 23-26 of Shin appear only to show that a nanotube is synthesized between gate electrodes in a FET. Also, while Figures 23-26 of Shin appear to show a source and drain, there is no showing or suggestion in Shin that a source or drain is formed from a nanowire. For this additional reason, Applicants respectfully submit that the basis for rejecting Claim 13 under 35 U.S.C. § 103(a) is traversed.

Claim 14

The instant Office Action states that Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hofmann and Jin (U.S. Patent No. 6,286,226). The Applicants have reviewed the cited references and respectfully submit that the present invention as recited in Claim 14 is not

anticipated nor rendered obvious by Hofmann and Jin, alone or in combination.

Claim 14 is dependent on Claim 12 and recites additional limitations. Hence, by demonstrating that Hofmann and Jin (alone or in combination) do not show or suggest the limitations of Claim 12, it is also demonstrated that Hofmann and Jin (alone or in combination) do not show or suggest the limitations of Claim 14.

As presented above, Applicants respectfully submit that Hofmann does not show or suggest the limitations of Claim 12. Applicants also respectfully submit that Jin does not overcome the shortcomings of Hofmann. Specifically, Applicants respectfully submit that Jin, alone or in combination with Hofmann, does not show or suggest “a first elongated nanowire on an insulating surface and a second elongated nanowire on said insulating surface at a right angle to said first elongated nanowire,” nor does Jin, alone or in combination with Hofmann, show or suggest that the first and second nanowires on said surface are “separated ... by a gap of between 0.4 nm and 10 nm,” as recited in independent Claim 12.

Therefore, Applicants respectfully submit that the present claimed invention as recited in independent Claim 12 is not shown or suggested by Hofmann and Jin, alone or in combination. Accordingly, Applicants respectfully submit that the basis for rejecting Claim 14 under 35 U.S.C. § 103(a) is traversed, as Claim 14 is dependent on an allowable base claim and contains additional limitations.

Claims 16 and 17

The instant Office Action states that Claims 16 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hofmann and Yano et al. ("Yano;" JP 04-097564). The Applicants have reviewed the cited references and respectfully submit that the present invention as recited in Claims 16 and 17 is not anticipated nor rendered obvious by Hofmann and Yano, alone or in combination.

Claims 16 and 17 are dependent on Claim 12 and recite additional limitations. Hence, by demonstrating that Hofmann and Yano (alone or in combination) do not show or suggest the limitations of Claim 12, it is also demonstrated that Hofmann and Yano (alone or in combination) do not show or suggest the limitations of Claims 16 and 17.

As presented above, Applicants respectfully submit that Hofmann does not show or suggest the limitations of Claim 12. Applicants also respectfully submit that Yano does not overcome the shortcomings of Hofmann. Specifically, Applicants respectfully submit that Yano, alone or in combination with Hofmann, does not show or suggest "a first elongated nanowire on an insulating surface and a second elongated nanowire on said insulating surface at a right angle to said first elongated nanowire," nor does Yano, alone or in combination with Hofmann, show or suggest that the first and second nanowires on said surface are "separated ... by a gap of between 0.4 nm and 10 nm," as recited in independent Claim 12.

Therefore, Applicants respectfully submit that the present claimed invention as recited in independent Claim 12 is not shown or suggested by Hofmann and Yano, alone or in combination. Accordingly, Applicants respectfully submit that the basis for rejecting Claims 16 and 17 under 35

U.S.C. § 103(a) is traversed, as Claims 16 and 17 are dependent on an allowable base claim and contain additional limitations.

Conclusions

In light of the above remarks, Applicants respectfully request reconsideration of the rejected claims.


Based on the arguments presented above, Applicants respectfully assert that Claims 12-17 overcome the rejections of record and, therefore, Applicants respectfully solicit allowance of these claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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